What is claimed is:

1. A method for obtaining DNA polymerase from a sample comprising:

fractionating a sample comprising at least one DNA polymerase using Poly U Sepharose chromatography; and

obtaining substantially pure DNA polymerase.

2. A method of claim 1 wherein the sample fractionated by Poly U Sepharose chromatography is obtained from a prior fractionation of an initial sample comprising at least one DNA polymerase.

dup. of clm. 2

3. A method of claim 1 wherein the sample fractionated by Poly U Sepharose chromatography is obtained from a prior chromatography of an initial sample comprising at least one DNA polymerase.

clarify which column to use ie. clm. 4 or clm. 5 or clm. 6 or 7 or 8 or 9.

4. A method of claim 3 wherein the prior chromatography comprises hydrophobic chromatography.

5. A method of claim 3 wherein the prior chromatography comprises affinity chromatography.

6. A method of claim 3 wherein the prior chromatography comprises use of a matrix with heparin.

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
STANFORD RESEARCH PARK
700 HANSEN WAY
PALO ALTO, CALIF. 94304
650-849-6600

7. A method of claim 6 wherein the prior chromatography comprises use of Heparin Sepharose chromatography.

8. A method of claim 3 wherein the prior chromatography comprises use of a matrix with a dye-binding material.

9. A method of claim 8 wherein the prior chromatography comprises use of Blue Sepharose chromatography.

10. The method of claim 1 wherein the substantially pure DNA polymerase is at least about 95% homogenous.

11. The method of claim 1 wherein the substantially pure DNA polymerase is at least about 85-90% homogenous.

12. The method of claim 1 wherein the substantially pure DNA polymerase is at least about 75-85% homogenous.

13. The method of claim 1 wherein the sample comprises cells that comprise a recombinant expression vector capable of expressing a DNA polymerase.

14. The method of claim 13 wherein the cells are bacterial, yeast, mammalian, or insect cells.

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
STANFORD RESEARCH PARK
700 HANSEN WAY
PALO ALTO, CALIF. 94304
650-849-6600

15. The method of claim 1 wherein the sample comprises archaebacterial cells.

16. The method of claim 1 wherein the substantially pure DNA polymerase is an archaebacterial DNA polymerase.

17. The method of claim 1 wherein the substantially pure DNA polymerase is *Pfu* DNA polymerase I.

18. The method of claim 1 wherein the substantially pure DNA polymerase is *Pfu* DNA polymerase II.

19. A method for obtaining substantially pure DNA polymerase comprising:

(a) obtaining a sample comprising at least one DNA polymerase;

(b) fractionating the sample using hydrophobic chromatography;

(c) fractionating the product of (b) using Heparin Sepharose chromatography;

(d) fractionating the product of (c) using Blue Sepharose chromatography;

(e) fractionating the product of (c) using Poly U Sepharose chromatography; and

(f) obtaining substantially pure DNA polymerase.

20. A composition of matter comprising a substantially pure DNA polymerase obtained from the method of claim 1 or 19.

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
STANFORD RESEARCH PARK
700 HANSEN WAY
PALO ALTO, CALIF. 94304
650-849-6600

21. The composition of claim 20 wherein the DNA polymerase is an archaebacterial DNA polymerase.

22. The composition of claim 20 wherein the DNA polymerase is *Pfu* DNA polymerase I.

23. The composition of claim 20 wherein the DNA polymerase is *Pfu* DNA polymerase II.

24. A kit for obtaining substantially pure DNA polymerase comprising poly U chromatography resin.

25. The kit of claim 24 wherein the DNA polymerase is an archaebacterial DNA polymerase.

26. The kit of claim 24 wherein the DNA polymerase is *Pfu* DNA polymerase.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT
& DUNNER, L.L.P.
STANFORD RESEARCH PARK
700 HANSEN WAY
PALO ALTO, CALIF. 94304
650-849-6600